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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/525,185	03/14/2000	David F. Sorrells	1744.0450002	8068

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EXAMINER

ODOM, CURTIS B

ART UNIT PAPER NUMBER

2634

DATE MAILED: 04/08/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/525,185

Applicant(s)

SORRELLS ET AL.

Examiner

Curtis B. Odom

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,8,9 and 12-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 is/are allowed.
- 6) ☒ Claim(s) 1-4,8,12,13 and 15 is/are rejected.
- 7) ☒ Claim(s) 9 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

2. Claim 12 is suggested to be deleted because it is a duplicate of claim 9. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 8 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Mochizuki et al. (U.S. Patent No. 6, 459, 721).

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Regarding claim 1, Mochizuki et al. discloses a method for down-converting and de-spreading a received spread spectrum signal, comprising the steps of:

receiving (column 18, lines 9-24) the spread spectrum signal; and

sampling (column 18, lines 9-24) the received spread spectrum signal according to a control signal resulting in a de-spread baseband signal, wherein the control signal includes a spreading code corresponding the received spread spectrum signal.

Regarding claim 8, which inherits the limitations of claim 1, Mochizuki et al. discloses the spreading code is a PN code (column 4, lines 40-53).

Regarding claim 12, which inherits the limitations of claim 1, Mochizuki et al. discloses the spreading code is a PN code (column 4, lines 40-53).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-4, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki et al. (U.S. Patent No. 6, 459, 721).

Regarding claim 2, which inherits the limitations of claim 1, Mochizuki et al. discloses storing samples in a storage module, wherein successive sample form the de-spread signal (Fig.

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6, block 903, column 6, lines 33-36), wherein the addition of the received signals output from the A/D converter (samples) form the de-spread signal. Mochizuki et al. does not disclose the signal is under-sampled and stored as under-samples. However, it would have been obvious to one skilled in the art that the signal could have been under-sampled to recover the baseband signal. There would be no frequency inversion in the baseband alias with the use of under-sampling as oppose to sampling with a frequency which is harmonic to the received signal. Thus, under-sampling is deemed a design choice and does not constitute patentability.

Regarding claim 3, which inherits the limitations of claim 2, Mochizuki et al. does not disclose operating a switch according to the control signal. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the sampling means of Mochizuki could have included switches and capacitors which are controlled by a control signal such as the sampling clock signal. The switches are operated on the phases of the sampling clock signal (see Bazarjani et al., U. S. Patent No. 5, 982, 315) and used to produce a sampled signal. Thus, implementing a sampling means comprising of switches and capacitors is deemed a design choice and does not constitute patentability.

Regarding claim 4, which inherits the limitations of claim 2, Mochizuki et al. does not disclose the step of charging a capacitor with the under-samples. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the sampling means of Mochizuki could have included switches and capacitors which are controlled by a control signal such as the sampling clock signal. The switches are operated on the phases of the sampling clock signal and used to produce a sampled signal. The outputs of the switches (samples) are used to charge the capacitors (see Bazarjani et al., U. S. Patent No. 5, 982, 315).

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Thus, implementing a sampling means comprising of switches and capacitors is deemed a design choice and does not constitute patentability.

Regarding claim 13, Mochizuki et al. discloses an apparatus (Figs. 1-32) for down-converting and de-spreading a spread spectrum signal, comprising:

- a spreading code generator (Fig. 1, block 4B) for generating a spreading code;

- a universal frequency down-conversion module (Fig. 1, block 7A) coupled to the spread code generator, comprising:

- a sampling means (Fig. 5, block 711, (column 18, lines 9-24) controlled by a control signal to sample the spread spectrum signal, wherein the control signal carries the spreading code; and

- a storage device (Fig. 6, block 903, column 6, lines 33-36) coupled to the sampling means to store the samples, wherein successive samples for the de-spread baseband signal, wherein the addition of the received signals output from the A/D converter (samples) form the de-spread signal.

Mochizuki et al. does not disclose the sampling means is a switch and the signal is under-sampled and stored as under-samples. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the sampling means of Mochizuki could have included switches and capacitors which are controlled by a control signal such as the sampling clock signal. The switches are operated on the phases of the sampling clock signal (see Bazarjani et al., U. S. Patent No. 5, 982, 315) and used to produce a sampled signal. Thus, implementing a sampling means comprising of switches and capacitors is deemed a design choice and does not constitute patentability. It would have also been obvious to one skilled in

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the in art that the signal could have been under-sampled to recover the baseband signal. There would be no frequency inversion in the baseband alias with the use of under-sampling as oppose to sampling with a frequency which is harmonic to the received signal. Thus, under-sampling is deemed a design choice and does not constitute patentability.

Regarding claim 15, which inherits the limitations of claim 13, Mochizuki et al. does not disclose the storage device in one of a capacitor and an inductor. However, it would have been obvious to one skilled in the art that a storage device comprising of a capacitor and inductor could have been implemented to store the values. A device such a sample and hold circuit which includes capacitors and inductors to store (hold) a value after it is sampled could have been implemented to sample and store the signal (see Schiltz, U. S. Patent No. 5, 339, 459). Thus, using a capacitor and inductor as a storage device is deemed a design choice and does not constitute patentability.

Allowable Subject Matter

7. Claim 16 is allowable over prior art because related references do not disclose creating a control signal using a pulse generator, the control signal including a spreading code, wherein the control signal is used to control a switch which under-samples a spread spectrum signal.

8. Claims 9 and 14 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lam et al. (U.S. Patent No. 5, 937, 013) discloses creating under-samples by sampling using a switch controlled by a control signal.

Kosugi et al. (U.S. Patent No. 5, 369, 789) discloses a sample and hold circuit wherein the signal is sampled using a switch and held in a capacitor of the circuit.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 703-305-4097. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Curtis Odom

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April 2, 2004



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